IN THE CLAIMS:

Cancel claims 8-22 without prejudice.

1. (Amended) A catalyst system comprising:

a complex with the formula:

$[ML_y(HSR)_{\tilde{n}}]^n$

wherein M is a transition metal cation;

L is a ligand;

~~Y~~ y is a whole number between 0 and 5;

ñ is a whole number between 1 and 6;

n is the charge of the complex;

H is Hydrogen;

S is sulphur; and

R is any organic group or hydrogen.

2. (Original) The system of claim 1, wherein the transition metal is selected from the group consisting of cobalt, manganese, chromium and iron.

3. (Original) The system of claim 2, wherein M is selected from the group consisting of Co^{2+}, Mn^{2+}, Fe^2, and Cr^{3+}.

4. (Amended) The system of claim 1, wherein the organic group is an akyl or aryl group ~~having between one to twenty carbon atoms~~.

5. (Original) The system of claim 4, wherein the alkyl or aryl group contains sulphur, nitrogen or oxygen atoms.

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6. (Amended) ~~The catalyst of claim 1~~ A catalyst system comprising:

a complex with the formula:

$[ML_y(HSR)_{\tilde{n}}]^{n-}$

wherein M is a transition metal cation;

L is a ligand;

y is a whole number between 0 and 5;

ñ is a whole number between 1 and 6;

n is the charge of the complex;

H is Hydrogen;

S is sulphur; and

R is any organic group or hydrogen, wherein L is selected from the group consisting of cyano, amino, aquo, hydroxo, thiocyanato, trifluoroborato, phosphino, nitro, nitrato, and carboxo.

7. (Amended) ~~The catalyst of claim 1~~ A catalyst system comprising:

a complex with the formula:

$[ML_y(HSR)_{\tilde{n}}]^{n-}$

wherein M is a transition metal cation;

L is a ligand;

y is a whole number between 0 and 5;

ñ is a whole number between 1 and 6;

n is the charge of the complex;

H is Hydrogen;

S is sulphur; and

R is any organic group or hydrogen, wherein -L is a chelating agent selected from the group consisting of dimethylglyoxime, phenanthroline, and ethylenediamine.

8. (Canceled) A method of preparing a polymer comprising:

providing an organic compound to be polymerized;

contacting the organic compound with a catalyst represented by the formula:

$[ML_y(HSR)_{ñ}]^n$

wherein M is a transition metal cation in a lower oxidation state;

L is a ligand;

Y is a whole number between 0 and 5;

ñ is a whole number between 1 and 6;

n is the charge of the complex;

H is Hydrogen;

S is sulphur; and

R is any organic group or hydrogen.

9. (Canceled) The method of claim 8, wherein M is selected from the group consisting of cobalt, manganese, chromium and iron.

10. (Canceled) The method of claim 8, wherein M is selected from the group consisting of Co^{2+}, Mn^{2+}, Fe^{2+},and Cr^{3+}.

11. (Canceled) The method of claim 8, wherein the organic group is an alkyl or aryl group having between one to twenty carbon atoms.

12. (Canceled) The method of claim 11, wherein the alkyl or aryl group contains sulphur, nitrogen or oxygen atoms.

13. (Canceled) The method of claim 11, wherein the organic compounds are selected from the group consisting of olefins, conjugated dienes, vinyl compounds, allyl compounds and mixtures thereof.

14. (Canceled) The method of claim 8, wherein the organic compound is selected from the group consisting of styrene, methyl styrene, acrylonitrile, acrylic acid, methacrylic acid, acrylamide, methacrylamide, methyl methacrylate, ethyl methacrylate, maleic anhydride, malelic acid, fumaric acid, isoprene, butadiene, chloroprene, vinyl acetate, vinyl chloride, vinyledene chloride, ethylene, propylene, butylene, isobutylene, alpha-olefins, allyl alcohol, alkyl vinyl ethers, and mixtures thereof.

15. (Canceled) The method of claim 8 wherein the organic compound to be polymerized is selected from the group consisting of unsaturated polyester resins, vinyl ester resins, alkyl resins, and glyptal resins.

16. (Canceled) The method of claim 8 wherein the method of preparing the polymer is selected from the group of techniques consisting of the system of mass, solution, suspension and emulsion.

17. (Canceled) The method of claim 11, and further comprising preparing the catalyst including

providing a transition metal containing compound selected from either the group of inorganic salts consisting of sulphates, nitrates, phosphates, and chlorides, or the group of organic compounds consisting of acetates, oxalates, hexanoates, octoates, oleates, decanoates, palmitates, decanoates, naphthenates, and stearates; and

contacting the transition metal containing compound with a thiol or mercaptan having less than 20 carbon atoms.

18. (Canceled) The method of claim 17 wherein the sulphur compounds and thiols or mercaptans are monofunctional and selected from the group consisting of hydrogen sulphide, methyl, ethyl, propyl, butyl, , hexyl, octyl, decyl, dodecyl, stearyl, benzyl, naphthyl, benzoyl, mercaptans and thiols, thioglycolyc acid, and any mercaptan or thiol containing less than twenty carbons.

19. (Canceled) The method of claim 18 wherein the transition metal compound is a carboxylated transition metal selected from the group of salts consisting of cobalt, maganese, chromium, and iron salts, and the thiol or mercaptan includes a group selected from the group consisting butyl, hexyl, dodecyl, benzyl, benzoyl groups, hydrogen sulphide, thiohglycolic acid, and any alkyl or aryl group containing one to twenty carbons atoms.

20. (Canceled) The method of claim 8, and further comprising preparing the catalyst including

providing a transition metal compound selected from the group of carboxylates consisting of cobalt carboxylates, manganese carboxylates, chromium carboxylates and

iron carboxylates or from the group of inorganic salts consisting of sulphates, nitrates, phosphates, and chlorides;

reacting an alkyl or aryl halide containing one to twenty carbon atoms with two equivalents of aqueous thiourea to from a hydrolyzed product; and

reacting the product with the transition metal compound.

21. (Canceled) The method of claim 8, wherein L is selected from the group consisting of cyano, amino, aquo, hydroxo, thiocyanato, trifluoroborato, nitro, nitrato, phosphino, and carboxo.

22. (Canceled) The method of claim 8, wherein L is a chelating agent and selected from the group consisting of dimethylglyoxime, phenanthroline, and ethylenediamine.